S34 E76

One x One Degree
Climate Change Atlas Tree Species
Current and Potential Future Habitat, Capability, and Migration

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	sq. km	sq. mi	FIA Plots
Area of Region	1,516.2	585.4	37

Species Information

The columns below provide breif summaries of the species associated with the region and described in the table on the next pages. Definitions are provided in the Excel file for this region.

Genus	Species
Ash	2
Hickory	3
Maple	1
Oak	10
Pine	5
Other	16
	37

Abundance	
Abundant	4
Common	12
Rare	21
Absent	15
	52

	Model Reliability	Adaptability
High	11	13
Medium	26	34
Low	19	9
FIA	1	
	57	**56**

Potential Change in Habitat Suitability	Scenario RCP45	Scenario RCP85
Increase	17	19
No Change	7	8
Decrease	12	9
New	10	10
Unknown	11	11
	57	**57**

Capability to Cope or Persist	Scenario RCP45	Scenario RCP85
Very Good	8	8
Good	11	12
Fair	4	4
Poor	7	8
Very Poor	4	2
FIA Only	1	1
Unknown	10	10
	45	**45**

Migration Potential	SHIFT RCP45	SHIFT RCP85
Likely	2	2
Infill	12	16
Migrate	4	6
	18	**24**

Potential Changes in Climate Variables

Temperature (°F)

	Scenario	2009	2039	2069	2099
Annual Average	CCSM45	63.2	64.6	66.2	66.3
	CCSM85	63.2	64.9	66.9	69.2
	GFDL45	63.2	66.6	67.8	68.7
	GFDL85	63.2	65.8	68.9	72.2
	HAD45	63.2	64.8	67.2	68.4
	HAD85	63.2	65.1	67.8	71.3
Growing Season May—Sep	CCSM45	76.0	77.2	78.5	78.8
	CCSM85	76.0	77.2	79.3	81.9
	GFDL45	76.0	79.6	80.8	82.1
	GFDL85	76.0	78.9	82.2	85.7
	HAD45	76.0	78.0	80.0	81.2
	HAD85	76.0	78.0	81.2	84.5
Coldest Month Average	CCSM45	43.9	46.3	47.0	47.3
	CCSM85	43.9	46.1	47.0	48.2
	GFDL45	43.9	47.1	47.4	48.2
	GFDL85	43.9	45.8	46.8	47.8
	HAD45	43.9	44.1	45.8	46.2
	HAD85	43.9	44.6	45.7	47.2
Warmest Month Average	CCSM45	80.5	81.7	82.4	82.3
	CCSM85	80.5	81.8	83.0	84.1
	GFDL45	80.5	82.8	83.9	84.7
	GFDL85	80.5	83.4	85.0	87.0
	HAD45	80.5	82.6	83.7	84.2
	HAD85	80.5	82.8	84.6	86.4

Precipitation (in)

	Scenario	2009	2039	2069	2099
Annual Total	CCSM45	57.0	61.1	62.7	62.2
	CCSM85	57.0	62.6	62.6	67.4
	GFDL45	57.0	60.6	62.8	65.9
	GFDL85	57.0	59.2	63.8	62.4
	HAD45	57.0	58.8	58.2	57.5
	HAD85	57.0	61.2	56.6	54.1
Growing Season May—Sep	CCSM45	28.8	33.7	34.0	33.5
	CCSM85	28.8	32.1	33.4	35.3
	GFDL45	28.8	30.2	31.9	33.8
	GFDL85	28.8	29.2	32.9	33.1
	HAD45	28.8	29.2	28.6	26.5
	HAD85	28.8	30.4	26.2	22.8

NOTE: For the six climate variables, four 30-year periods are used to indicate six potential future trajectories. The period ending in 2009 is based on modeled observations from the PRISM Climate Group and the three future periods were obtained from the NASA NEX-DCP30 dataset. Future climate projections from three models under two emission scenarios show estimates of each climate variable within the region. The three models are CCSM4, GFDL CM3, and HadGEM2-ES and the emission scenarios are the 4.5 and 8.5 RCP. The average value for the region is reported, even though locations within the region may vary substantially based on latitude, elevation, land-use, or other factors.

Cite as: Iverson, L.R.; Prasad, A.M.; Peters, M.P.; Matthews, S.N. 2019. Facilitating Adaptive Forest Management under Climate Change: A Spatially Specific Synthesis of 125 Species for Habitat Changes and Assisted Migration over the Eastern United States. Forests. 10(11): 989. https://doi.org/10.3390/f10110989.

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Common Name	Scientific Name	Range	MR	%Cell	FIAsum	FIAiv	ChngCl45	ChngCl85	Adap	Abund	Capabil45	Capabil85	SHIFT45	SHIFT85	SSO	N
loblolly pine	Pinus taeda	WDH	High	76.5	2400.8	21.3	No change	No change	Medium	Abundant	Good	Good			1	1
pond pine	Pinus serotina	NSH	Medium	64.4	1313.6	18.8	Lg. dec.	Lg. dec.	Low	Abundant	Poor	Poor			0	2
red maple	Acer rubrum	WDH	High	65.9	578.1	8.2	No change	Sm. inc.	High	Abundant	Very Good	Very Good			1	3
sweetgum	Liquidambar styraciflua	WDH	High	72.5	506.4	5.4	Sm. inc.	Sm. inc.	Medium	Abundant	Very Good	Very Good			1	4
slash pine	Pinus elliottii	NDH	High	6.6	324.5	48.8	Sm. inc.	Sm. inc.	Medium	Common	Good	Good	Infill ++	Infill ++	1	5
loblolly-bay	Gordonia lasianthus	NSH	Medium	35.8	302.7	6.5	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor			0	6
swamp tupelo	Nyssa biflora	NDH	Medium	66.6	287.0	4.1	Lg. inc.	Lg. inc.	Low	Common	Good	Good			1	7
longleaf pine	Pinus palustris	NSH	Medium	20.7	250.7	6.7	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good	Infill ++	Infill ++	1	8
redbay	Persea borbonia	NSL	Low	53.7	215.7	3.3	No change	No change	High	Common	Good	Good			1	9
American holly	Ilex opaca	NSL	Medium	43.9	161.1	3.6	No change	No change	Medium	Common	Fair	Fair			1	10
white oak	Quercus alba	WDH	Medium	22.1	117.4	4.2	Lg. dec.	Sm. dec.	High	Common	Fair	Fair	Infill +	Infill +	1	11
sweetbay	Magnolia virginiana	NSL	Medium	45.1	115.5	2.4	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	12
green ash	Fraxinus pennsylvanica	WSH	Low	15.5	69.6	5.6	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	13
pond cypress	Taxodium ascendens	NSH	Medium	16	65.9	2.8	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good	Infill ++	Infill ++	1	14
live oak	Quercus virginiana	NDH	High	4.3	62.3	6.1	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			2	15
southern red oak	Quercus falcata	WDL	Medium	11	55.6	3.3	Sm. inc.	Lg. inc.	High	Common	Very Good	Very Good	Infill ++	Infill ++	1	16
pecan	Carya illinoinensis	NSH	Low	6.7	44.9	6.8	Sm. dec.	Sm. dec.	Low	Rare	Very Poor	Very Poor			0	17
American hornbeam; muscle	Carpinus caroliniana	WSL	Low	6.5	38.1	5.6	No change	No change	Medium	Rare	Poor	Poor			1	18
sourwood	Oxydendrum arboreum	NDL	High	23.1	37.3	1.5	Lg. dec.	Lg. dec.	High	Rare	Poor	Poor			1	19
post oak	Quercus stellata	WDH	High	18.7	29.9	2.4	Lg. dec.	Lg. inc.	High	Rare	Poor	Good		Infill ++	1	20
yellow-poplar	Liriodendron tulipifera	WDH	High	4.4	26.7	2.7	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	1	21
water oak	Quercus nigra	WDH	High	36.2	26.1	0.9	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			1	22
shortleaf pine	Pinus echinata	WDH	High	6.6	25.9	3.9	Sm. dec.	No change	Medium	Rare	Very Poor	Poor		Infill +	1	23
laurel oak	Quercus laurifolia	NDH	Medium	14.5	20.6	1.4	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	1	24
river birch	Betula nigra	NSL	Low	6.5	19.3	2.9	Sm. dec.	No change	Medium	Rare	Very Poor	Poor		Infill +	1	25
flowering dogwood	Cornus florida	WDL	Medium	13.2	17.4	0.9	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	26
bald cypress	Taxodium distichum	NSH	Medium	6.5	13.9	2.1	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	2	27
blackgum	Nyssa sylvatica	WDL	Medium	24	11.3	0.6	Lg. inc.	Lg. inc.	High	Rare	Good	Good			1	28
mockernut hickory	Carya alba	WDL	Medium	6.6	9.8	1.5	Sm. inc.	Sm. inc.	High	Rare	Good	Good	Infill ++	Infill ++	1	29
pignut hickory	Carya glabra	WDL	Medium	6.5	9.0	1.3	Very Lg. dec.	Very Lg. dec.	Medium	Rare	Lost	Lost			0	30
scarlet oak	Quercus coccinea	WDL	Medium	6.6	8.7	1.3	Very Lg. dec.	Very Lg. dec.	Medium	Rare	Lost	Lost			0	31
swamp chestnut oak	Quercus michauxii	NSL	Low	6.5	7.5	1.1	No change	No change	Medium	Rare	Poor	Poor		Infill +	1	32
willow oak	Quercus phellos	NSL	Low	18.6	6.7	0.7	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	1	33
American elm	Ulmus americana	WDH	Medium	6.5	4.0	0.6	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	2	34
black cherry	Prunus serotina	WDL	Medium	12.1	2.4	0.7	Lg. inc.	Lg. inc.	Low	Rare	Fair	Fair	Infill +	Infill +	1	35
blackjack oak	Quercus marilandica	NSL	Medium	4.4	2.3	0.2	Lg. dec.	Lg. dec.	High	Rare	Poor	Poor			0	36
pumpkin ash	Fraxinus profunda	NSH	FIA	8.8	0.9	0.2	Unknown	Unknown	NA	Rare	FIA Only	FIA Only			0	37
Atlantic white-cedar	Chamaecyparis thyoides	NSH	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat	Likely +	Likely +	3	38
sand pine	Pinus clausa	NDH	High	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			0	39
serviceberry	Amelanchier spp.	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	40
pawpaw	Asimina triloba	NSL	Low	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	41
shellbark hickory	Carya laciniosa	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	42
sugarberry	Celtis laevigata	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	43
silverbell	Halesia spp.	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	44
Osage-orange	Maclura pomifera	NDH	Medium	0	0	0	Unknown	Unknown	High	Modeled	Unknown	Unknown			0	45
southern magnolia	Magnolia grandiflora	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	46
bigleaf magnolia	Magnolia macrophylla	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	47

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red mulberry	Morus rubra	NSL	Low	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	48
water tupelo	Nyssa aquatica	NSH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat	Migrate ++	Migrate +	3	49
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	0	0	0	Unknown	Unknown	High	Modeled	Unknown	Unknown			0	50
cherrybark oak; swamp red o	Quercus pagoda	NSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	51
turkey oak	Quercus laevis	NSH	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate ++	Migrate +	3	52
overcup oak	Quercus lyrata	NSL	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	53
bluejack oak	Quercus incana	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			2	54
cabbage palmetto	Sabal palmetto	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	55
black willow	Salix nigra	NSH	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat		Migrate ++	3	56
sassafras	Sassafras albidum	WSL	Low	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	57